PCT/CA2004/001674

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<110> PERFORMANCE GENOMICS, INC.

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<130> 31649-2137

<150> US 10/662,613 <151> 2003-09-15

WO 2005/026386

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<170> PatentIn version 3.2

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Glu Pro Glu Glu Leu Glu Met Glu Leu Glu Met Glu Pro Glu Asn Met 50 55

Glu Ser Val Pro Leu Asp Pro Ser Ala Ser Ser Ala Ser Leu Pro Leu 65 70 75 80

Pro Glu Arg His Ser Gly His Lys Ala Glu Asn Gly Pro Gly Pro Gly 95 85 Page 11

PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt gcagctcgat ccacttgcaa acaccattca tgaatcagca atggcaggtc aatccagaag 12840 aaacctcgag gctctgccaa gtacaaggaa gcagcagcaa gaagctgcca gaaagaacac 12900 caccagaagt tcttttgtgg catttctgtc tatgaagtca tatcaaatga tgactagcaa 12960 agaatggcaa ggcaaggtgc tggtgagatg gcttagcagg taagagcact gactgctctt 13020 cccaaggtac tgagttcaaa tcccagcaac cacatggtgg cttacaacca tcgtaatgag 13080 atctgatgcc ctcttctggt gtgtctcaag tcaactacag tgtacttatg tataataata 13140 13200 ccagtgtcag caaaacccaa tgataaccag caaatatata tatcctttcc aaacatcaca 13260 ttcttgttct ctcaagtgtc agctttagca aaacatcaca tgccctttgc ctagactgct 13320 tctagaaaac caccgtgtat ctgttctcag caaaacatcc tcccacatgt ctgcttcagc 13380 13440 aaagaagcca gaaatttcca attcaaagag tactagtatg caacctagag accattcttg 13500 tgatattttg acaaagatca tgggtacatt ctgctcttgt catgcacaca gacacacaaa 13560 tctgcctgag gttaaataga agagttatga atgaacatct ttagaagatt tgtctctaag 13620 agatttccaa aaagtttagt attgactttg ttgcttggtt attagtgacc atacttatgc 13680 agatctgtaa cgaagaggac caagctaaac aaggaacata cagaatgtac agtttgagga 13740 gaaaaggagc ccagggaagt gtaatggagt caagtccagt gcttgaggag ataaacctga 13800 tgttaaatgg aaaggagaag tggtgacctc aagccaggac tccacctagc taagcttcca 13860 acttctgaga agtaatcaaa gaaaagttta gaactgggtg tagctgaatt accttgaatg 13920 ttagcagcac tcatgagaca gaggcagcag gcaggtcact gagttcaagg ccagcctggt 13980 gtacagatgg ggttccagga cagccaagct taggcagtga aggaaaccac tgaaaacaga 14040 aagctggtga agatggattt gaatgaagag gcacattcca ggcccagcag cagcagaact 14100 tggtagcttt ggccatattg ctctggcttt agagtggagg gtacaaaaaa aagagttatg 14160 gaatctccct ccgtgactaa ggaaagctga tggggccagg tgtgtgtcag ggatgtttct 14220 gcatggagac ccagagacct ttgcttaaag ttgtgcaggt aaaaacctgg attgttgtga 14280 tagtttgaat gcttggccac agggagtggc actattggga ggtgtggcct tattgaacga 14340 agcgtggcct tgttagagga agtgtgtcac tgtggaggca ggactttgaa gtcatatatg 14400 ctcaagctct gttcagtgtg acatacattc tccttctgat gcctccagat caatatgtaa 14460 aactctcagc tcctccagca caatgtctcc ttggatgctg ccatccttcc cgccatgatg 14520 ataatggagt gaacctctga aactgtaagt cagccccaat taaatgttat gagttgccat 14580 ggtcatggtg tctattcaca gtgatggaaa acctaactca gacgattgcc ccagaaagcc 14640 cccaagatgt tggatatgcc agagtcatgg gatttgtgaa gagggatgct gttaacaggg 14700 agtggaactg gcccaagaga aataactgtg ttgcagtcaa caaagttgaa aagagttgga 14760 gatctgaaga ctgctttgac atcaggcacg gagatgcaga gtttggagtt tacacagctg 14820 Page 19

PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt ctctgtctac cagccctttc ctttctcttc ttcagtgctg ggctggaacc caagactttg 22920 ctcatgctag actaggcaag ctactcagcc ccagccttgt tcatggcact gagtgcttcc 22980 23040 atatgcccgg tgagctctcc caggtctggc tttcattgct ctcttcacaa gcctggatgg tgttggatac ctgatggccc ccgggtctct tctctccctt cagggcaagg ggaacatgtg 23100 atctctctct ctctctctt ctctctctt ctctctctt ctctccctt ccctctccct 23160 ctccctctcc ctctcctct ccctctctca ttgttactcc tgcttgtgga gccaagcaaa 23220 gaaaatgacc actgaacagt gaccacgtga caagttgggg aaagataagt agaaaagggg 23280 gcgagaagag gggaagggaa ggagaggtaa gaactatgca aagaaaggaa gaaaaggaag 23340 agaaagggga gggggagaga aaggaagcag ggaggaggac ctctgtacac ctccaaacta 23400 accettcaag atccaaagag catettette cetgtggeec tecageggee eggeettget 23460 caactctcac agcaaccctg agcggagtgc ttgggtctgc attgcaccgg tggggaagcc 23520 gaggcctggg aggttccaac ctttgtctag aagcacctca tcctccgaga agatcagcac 23580 tgacagagag gtcacccacc tgcctctgag ggccacctcc ccagagccca gagaaggatc 23640 ttacctggga tctgtgggcg gccatctaac ccagaaggca tgggggtgcc tggaaatgcc 23700 aggaaaggaa gtcaggaaca gctcaggcag aaatgaaggc acaaaatggg ccccacattc 23760 ctggctgaac tgggatcaag agtgagcaca agcttctaag atctcaggct ttcttccttc 23820 23880 caacctatct gctacttggc ctggaaggag gatgcccaca gccttccctg cctcacctag 23940 24000 cctttcttgt ccccctccc aacaacaaca acaaatccat ggcttttgtt tctaaaatta 24060 tatccgcaca ataacctctc tgccaattcc aggcacacag agccaatgga ccagctccct 24120 ttggataatt caaattgacc ccaagatagc cctaccccac ttgtacctcc tccctttgtt 24180 taagaggttg ctctaagctc tttgtttcct gaccgaaatc cttccatggc ttcctattat 24240 cccagagaag tccacacctg actaagcatt ccacccagcg tctgcagcct tctcaagttt 24300 caatccccat ccttcctggg gtggagtgtc cctgttgtac ctttggtaga gatgactagg 24360 gactcatcag attacaccag gacagttgat gtttggatta gcagcagggg tgtgaggcta 24420 gatgcttatt tgccttgtgg catgcaggac acctgtcagc tgcggagaac ggctcgccat 24480 accaatttcc cgaagggcct cgggctcttg tgcttccttc tgctatgatg ctagcctcgg 24540 ctgctgccac gtgtgttccc agcctcctgc tctggcccat cttcatctgt ccacagacct 24600 cagtgttgca aacatggctt cttcagatat gtctccctag ggtgcccccg cttcaggaag 24660 tacggctgag agagccatgg ctctttggtt cctggtcact ttgagttcct ccataccagg 24720 agggatgggt tggagctcag agaagaccct gggcatacag tcttgggtgc ctttgtgtcc 24780 aggcaactaa ggcacctcac ccgctatatt ttgcaggaac tttctaagct gggcttaggg 24840

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission txt caacccccc tagggtgtgc ctacaagcat gtccaaagag ggatgagctc aaccgtgctg 45000 taggtccatg cagctcgaag ggattaagaa gacagcagat ggtctgtgac cttgtgctgg 45060 45120 ggctctctga gctttagtct acccgtgcaa gagagtgact cctgaccaca gagctctgtg tgagcatgct gtatagacct tccaggggct tggggagagc tttcaaatct ggctcagcag 45180 tagtaactaa cttgcatttt tgtcttaaaa attaaatttt gcatgaaaaa gatgagccag 45240 45300 45360 cacgccatgg tgcaaagtgc caattagcac tggggggacc aagggggcac aggatgagat 45420 taaggagcag cacaaagtca cagatccaac aagctcagca gcagcaggat agagcctttc taatcctctc ctgtacccac acacaacgga gtgggtggct ctggaaatac atacagcata 45480 tcagggcagt tgtccggctt gtccagaagg ccaccctcca tgacgaaacg aagaacttgc 45540 tcgttggaca agccctggta gggctgctca gccagcgtgg cgatctccca gaggacgacc 45600 ccgaaggacc tacaggtgga acagaacagg aacagctcag aaagggatgg gaagggccat 45660 gtcccctcct tgccagcatt tcttagactc tgggtcctga aaaaaagtgt cctcaatgtg 45720 acgactgcac tttgtggaca tcaaaccagc cagcttgcta cgtgtgggac atctgttccc 45780 ctttgtcact gctaaggctt cctatagggc tactgcaacc cagggctgag gtaattaatg 45840 ttaggggctt ctaacatctc tcacagtttt aagagcccga tctacagcgg acacattcag 45900 tgtctggtcc cagccattac ttggacataa gccaaattag ctctagttca gcaaggaatg 45960 cagaggacca ggtcccagcc tggccactga cctgagacag ctaagcatct caactatctc 46020 ctgcagggat ttctttcatg ccagcttaga aatactgatg ctaatggttc tccacgcctc 46080 cgcaagaaga atctgatcag ggttcttaaa acaatgggta tcttgggctc tccaaagcaa 46140 ttctgacctg ctggttgtag ggtagggagc tgggcctgga atgtctcaaa gttctgtagg 46200 atcttgactt gggtcaagga agatgaaaac tcgtcccctg cagaactcag gagccatggc 46260 tgcagaggtg gctgtgtcag gaagggaact ggggtaggat acactggcca gggggtgtgt 46320 cgcaataaca aagagtccct tggtctagag gctggctgag gtatgaactc atcaggcgaa 46380 gcagcgagga ttctactgcg tgaggtatgg cctgtcagcc cagaagatgg aactaaagga 46440 gatccatgca tgcagacact tcagacagac aatggtcaca ctgtcgctca gtgtgaacac 46500 accttctcag ggagaaccct tgctttcaca aaattcttcc tggcctgtct gctcttatgg 46560 tcaggctgta tggctagaat gaagaaggct gcccatggca agccaacaca aggcttcgga 46620 tggaacccta gcagggctga gccccacaga agagcctgag gcggccattt tccacttagc 46680 actctgagga tcctggccta agctggagca acagcctctg actgcatctt aacttttggt 46740 tcgcagcttc agtttccttc taggaacaaa agggttttgt cccaactgat gctaagcaat 46800 gtcagacagg aacagaacct cagcaatcag acccaagttc cttgggaacc ggcagtcact 46860 aagacagaca gtgcagttac ggttttcaaa gacctggccc tagagaagca ggtttcctgt 46920 gtgtttcagg cctgggttct gccttgcaga gcctttgtgg acactcggag gcattcttta 46980 Page 35

PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt gttataaatg attaaagaaa ccatagtaaa accatacgca cttacatggt gcttttaaat 61080 tacaaagggt tttctctttt ttttttttt cccatgtgag caggataatc aatcggactg 61140 61200 tgtcttatct gggccgcatc tacttacact tctggagcaa agaaacattc ctcctgaaca aactcctgcg ctgcacagac ccccatctaa ccagattccc tacatagccc agcaacctca 61260 cagctagctc ttccatacac cacatcatga ggattcagga ggaaggcttg ggatgtccct 61320 tgtgcagact tcccacggct cagctgtggg agcctgaaca agtccttctc agagattctt 61380 tttttgcctg catctagata gacatgagaa agctccaagg gctaatcgag gagaggaccc 61440 ctccccagct tacttagaag gtctgaagcc aagcataagc gctaggggaa aaaaagagac 61500 cagtagctaa aacacaggtt ccgagtcaga acttctgagc catttaatta aatgactttc 61560 attagttact gccaaaggga atgtaaatgg gtgcataggc tgtatgaccc taatcaggat 61620 agaacagcag agggattcca agatcataca acgctatata gccctcactg gccagggaac 61680 61740 gcctgcagcc ccaccctgag ttgataccca ctcaggatgc ctggctggct acagcagtcc 61800 tctgactaga cggtagtaat tagaatgctc ctttcactct gatgccacac ttcaagcggc taactgaact gcttagcaga ccggccaccg gcatctccag agcctggttt ctactggggc 61860 atctgagagt cccagaatgt ctgacagtca ctgagtgcta aagatgttat taaaagacaa 61920 gaaggaaatg gtaccaaagg cagatcctgg gacaaaggta tctcaaaatt acgcaacgct 61980 tttctccagt cagcacctga cagctcccat attcccacac cttggccagg acgcttacca 62040 tcagctgcgc tgaaatactc ggggttcaca gaagcataca gcactccatt gcccaacctg 62100 ctgttatttc tgtcaaaaaa aaaaagatga aaaccaggtc aacaaatccc atctctatac 62160 atttctgtaa ataccttttc ttttcctttt tttctttctc acgagttatc ttgagcaagg 62220 gacgcaaacc atgatcactg ctgacgggac ccttgcctgc actcctgatc caggccccgg 62280 tatctgagga caaatctttc cacttttgcc ctggcctcag attagagctt ctaaagaaac 62340 atttgtttct ttgcttcact ggaaataaca aggcccactc catgggaagc taaactggca 62400 tgcttggaga agctcttaca aggcagcaat ctgtgtgcta gaacagccag aaagcagacg 62460 acgggtacag agaaggaagc aacccctctc ctgttgctgt tagtcattag gaaatgtcct 62520 tttttcccct ctgaagaatg tctgactagg aactctggct gtccagtctg catggtattt 62580 tcccccacag acgagctatg ttcaagttca aatcatcaag ccaatgcgcc acaagtactg 62640 tcttccgctg gcccaggcac tcacctcttt ctatggaaga catacagcat gataaccagc 62700 ccccaacga tcagcaggat ggcaaccggc agagcaatga tcagatgcat gaagttctca 62760 tacgtcgctg cagagacaag gaagaaacag gaagacgtca cgcacgaggt gaataactgg 62820 ctcacttcat ttctgtgtat ggttggaagg atgataaaac cgcctctgga atagccttta 62880 ctccctcatc tcacaagagg agtcttcgag gagtcttcta gtgctgggac aagaccagca 62940 gacaaactga attgtttgga gaaaggtaaa taaatacaga ctgaagcaca cactccttta 63000 aagcactgca tattctgaat acagcaagta attctgaagg caagcccttc ctgtgtgtag 63060 Page 43

## PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt acacccaagt tgacatgtct acacaataag gatggcgttg tgggtaaaaa cacttgctat 65100 gttaccctgg caaccagaat tcaatccctg gaacctgaga atcaactctt caatgttgtc 65160 ctctgacctc tgcacatgtg cacaccaagt acacaccaac agtatagaga tgtctccttg 65220 gaaaggagct ggggactcag tggagacatg ttcctggacc gcgagccact caccaatggt 65280 tggtctacct ctaaactcta ttcttaatcc tgaaatacta caaaagccaa aattaagtct 65340 ttttcaaaat cgatgggatt cagcaccttc cagtttctaa aagtactccc acgtgcgcct 65400 ccctgccaga gagaagctcc gagctttcct tttcccctag gagaattcgt ggttttgtgt 65460 tcctgattct acgggtcagg ttgttctgtg ttctttttga gtttcacatt tcaacaggga 65520 cacagaggaa ctggaacaca tccagaagga caaaactgac agaaaattgt ctatgcaact 65580 ggctttcaag aaagggccca aagacctgag aatatttaat cgggagggaa gaagtctgaa 65640 gaggagttta atagaattca cgcaccaaga tttccttaaa aacagcaggt gatgccgagc 65700 tttcaatgtc cccctctgag gattagaccc aagaaaactg tgctaaactg cgtcttgtcg 65760 gacaccggga aaatttccca gaagccaaga gcgctagcac gcagcttcaa tccccctgtg 65820 ggatgtgcca acttccactg gagaaacccc attagaggac ctcttaagag tccccagtgg 65880 cattgcagtc ttagctttac aaaggcagct acaaacatgc cctctcctaa gaaaagccag 65940 actcacttag cttcagaagt caagactgct ccttcagaga acaccaccca atttccagaa 66000 ctccagtgtt ggcttagtag cacgacgtgc tacagataag cggaaatgta ccccaaggca 66060 gagatgctca gggcttcgtt gccggcctgt gacgttattg ggaagtagtg gcaggtaacc 66120 ttaggagctg ggttctagag gaagtcaggt cactggaagc aggtgtcctg tgagagaact 66180 gtgaaacccg ggccctttct gccttttgga ggtaaccagc ttggttccat catgtgcttc 66240 ctgcttctga cattttgtct cagaacagcc caaaagtaat agaatcaaca gacagagcac 66300 gacaaccccc gaaactgtgg gggccacccc tctaatcatc tctgggtttt gccacatcgg 66360 agagctacag taacatcaca atggagagtt agcacataag ctaactgatg acgctaggct 66420 acccagaaaa aaatgagaaa attcagagtc tacctgacag aactctcagt ctcatcatct 66480 66540 ctcaatctag acacagtagc agcagataca gggaatccta gcttcctgct tacggttcta tttacttctg tctttgtgca gtcacgatga ggattttcga atgtcttgcg tatctttgaa 66600 tatctggaac tggctaggtg ggctatcgaa gtgtgaactg acataaagtt atacatgtat 66660 acatatttac cacatacaac atatcttaaa gcatgtgtac attaacccaa tcagcatcag 66720 cattaagtcg cattgttacc atttctgtgg tggtaacact ttcttagcaa tattcaataa 66780 tgctttatta accatagcta gtgtgttata aagctcactc ttctatctac ctaaaattgt 66840 gtaccttttg agcaacaccc cctaagttat gttcccctgg taacctgcaa gactctgagt 66900 tcaccctttt agatttattt catatatacg tgagatcacg tggtgtttcc ctttctgcac 66960 cttctattaa cagtattcca ttacatatat ggaccacatt tttacccagg cacctgctgg 67020 aggatacttc attgtttggc tactgtgact agtgggccaa aaaaacaagg ggggtgtaga 67080 Page 45

PCT - Sequence listing for submission.txt 67140 tttcaacaca actaacttcc atttcttttg gactgggatt gctggatctg ttgagacctt 67200 gtctgaatca agaatccaga agagaccacg aagaacataa gacattagga aacaacagtt ccccacaccc tagattctag cctcaaagct gagctgagat tttgggggggt ggggagtgca 67260 aaaggaattc acatttgatc ctgtatttgt ttggatatta catgaacacg aaataatcta 67320 aaaaaatttg gcttctcata agacacgtaa aaattcacta tgtattattt caccaaaaag 67380 actcaatttt ttttttttt cggtcaaaca agcatgcagc ccttgcattt aacatttcac 67440 aacatttact tttaaatctg aatcctaaca gctcactcag tggtttctgt gaactgtgaa 67500 acattatcca ctagggtggg tctgtgcaaa ataacgcaca gagtatcttt caatgcatcc 67560 tggtggatgg tgaagagcac agaggagggg aagactctga ctgggatgtt gtcctgcaga 67620 ttcctgtccc ggagcagtga caccagacga tccctgggga gacgctgagc gctgggtcac 67680 cctcaccgac caggcaggag acctgatact caactcaatg ctttgcaaaa tgcctccaca 67740 cctgagccac gatgagaaca agatatcttc taggttgtac gatactcttc tgttactcac 67800 aagagaaggc tccaaggctc agcaccttcc cagctctggg atgtgcgtgc gagtgcacgt 67860 gcgtgcgagt gttggggtgg ggggaaggtg atggtggcac agatgtgtgt ccactgtgag 67920 taaataccaa gtgtcttcct ttctggcgtg acacctccgt tttctagata cggcttctcg 67980 ctgaaagcaa aggtcaccaa tggaccattc tggctagcta gggatctgca aaactttgac 68040 tgtcgatctc ctgagcaccg aggaagcaca ctaccgcccc tggtttccgt caaggacttg 68100 aacttagatc tttaagcagg cactttccct agtaagccac ctcctcaacc cagccagctc 68160 tgttctaaca gaaaaccaga gagccccaga agctcagggc ttctgagttc tggcccagcc 68220 agctttgaaa tttaccgtgc gtctccctca ataagactta cttttggcgg ggacatagaa 68280 gaacacagga tctgtccatg acccattccc agagagggag gtagcctgaa tccgggctgt 68340 atagttccct gggtttagac ggttgagttt ggcccctccg tacttcctgt actcctgtct 68400 ggacacacat tcccgctgat cctatggaaa tataaggcgt taatttccta caagcatggg 68460 tgagatctga catctgtcaa ctcaagtcat catgctgtga ctccagctgc ccaacctctc 68520 cttacattgt ccagagtatc aacataaagg aagcaaggat accggaaaag tggttttcag 68580 gttggcacat ggaaaatggt aatcaaatat gttggtaatt aaatcaaata tgttggtaac 68640 tccagaggaa taaaagatca tcaagacgtg tctagtctgc ggctggaggc ctagctacag 68700 tttcattgtt tgtatgaagt ccagccagct ccatgcaccc aagttactac tcaataaaga 68760 tggcgttgct aggaagacct ttatccttcc cgactgccca tctttctccc ctgtctgctt 68820 agcagtcagc agacaaccag tatgccatag cacgtgctct cagcgctgaa acacatgcag 68880 ctgcaggcca tggtatccct cttacctcga cttgcgaccc gtatttaatt tcatacatta 68940 ggatcaatcc gttggggttc tcgggttctg gccactttaa aaagatggag ttttcgggtc 69000 ttggctccca ggtcaccgga ccagggatat catctgctcc ttctgcataa ttaatgtaaa 69060

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt gtatctctgt tggcaggaac tgtgcctgac tgaggaggag caggggacca atggcaagaa 105300 caaggagaaa aagcccagct gggggtctgt gctgtgtcca ccttacaagc atcacaatgc 105360 tttcagttta ttagtcttca atgtacccct ccactatctc tcttcacata cctttcccca 105420 ctccaatctc ctcatataaa ggtactacta tgacttcact gtacctctga aacaaaaatt 105480 acatgttgca atttgactat tgtcattatg gtgtggtggt aagactaact aaatctaacc 105540 aaaccaaatc taatctatgt tggaggtaag gcctttggga gagaattagg attgtatggt 105600 gtcactaggg tgggacatca ttgtggtagt agtgccttta tcttatatat agagagagac 105660 agagacagag acagacagag caagcaggca agctcagcaa gtcatgcctt ggccatgcca 105720 taatgcaata ggaatgccct ccttagagac tgacactaca tccttggact tctctgtctc 105780 cagaactatg aaaaagtatt ttctttataa actaaccagc atcaggtaag ataagtatac 105840 ctcataagga atagatggtg agtgttgctt cttggactca gtcagtcact gggttacatc 105900 ctagcaaaat ctgtggctca actcacaaag tcaaactaaa tagtgcttct cccccccgcc 105960 cccccccc agggggaggg atcgagggtg ggagagtcag agacagagta agaatgagga 106020 gaaaggagaa tgctttctcc aaaaggaaga caaggaccta aaacatactt atggtctttg 106080 caacgtcaaa aggagaactc tactgcctca ctactgagca agcatccaga gtttaaaaca 106140 gtgtctaagc atgtctgcct ggaagactgt agccactgca tagtctgtca cacagcaaag 106200 gcaacttcac gtggcaaaca gtgtcttaaa agcccaggcc gaaaaatcac attggtaaaa 106260 gtattctctg cctaatgcca aaaaccaaac caaaccacac cataccaaac caatccgaac 106320 caaacgaaag caatctcctt ttgtggcggg gcggtaggca gatccagagg agacgtcatt 106380 ttaagccaga atccaaagct atttcagttt ctgtttgaac agaaaggctg ttacagatgg 106440 agaacttcca cagagaaaag cggaccctga gcagaacact cctggagcac agcaagctgg 106500 acagagagag gacaggaccg cgtgcttttt tgacctgttg gcacgctagt catgagagct 106560 cctaactttt ccagcagctg atgctgtaag tcattttctc cttattgact ttcaaaggat 106620 tttcaactgc tctgggttag cttgcttcct aagaagagcc ctgaacagtg cacccgcact 106680 tgggcagttt cttgattctt ggggagtata taaagggcta taagtcacat attgttgctc 106740 ccctttggct ttgccctttg ctttccacac cttgaaagtt gcagggctgc tctgcaggca 106800 gcatggtcca gtcacagacg gccagagtca caggcaggtc cccatcttaa ttccaaatac 106860 atctgcaaaa cccctagaca gtcttccaag cagcccaagg gaagcccact gtttgcaggc 106920 ggtgcccctc aatgcggaga cagcactcat ttggatctgg tttcccaggt gaccttccgg 106980 cagcattcac tcctcagggc tccatgaagg tctggcacat gcggggcaag gctgctctct 107040 cccacatgct tgcaacccta ttctaacagc acaggatcat ttgaatcagt gtggaatatg 107100 ctgagactga aagatgtggt ctgccacggc tagggtaact tgctcagact cagatctcaa 107160 aagtaaggac atgcccacac tctgcaggct cattctgagc ctctaatcac tgagatctcc 107220 caggtcagcc tttccacaat agctgtctga gtctctctta tataaatcca atttatacca 107280 Page 65

PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt cccagctctg gggaatgact aatcttactc gtctccactt ctccactgaa tcgcctgcca 109320 ggagcatttt acttagtgga atcaaacaaa gggtgttctc ctgtagccac tgtcttccat 109380 ttaaaacaat gctttcaata ttcacccttg gcatggtgtc tactagtcct tctggctttg 109440 ggctgtactg attctcactg tgggaaagcg agcctttcta ttaatgtgga gtgataacat 109500 cgtaggtatt gggagtagaa atgctagaaa cactgacaaa ctcggaaggg gtaaggatgt 109560 caaaggatgg tggatgctga ggtccaggca aggtgctgag aagggtctgt ttgcatccca 109620 gactctgtat ttttggctaa ctctatccac taacttgggc cattctttga tagacagggc 109680 tgtcacagtg ggcataatct gtagaggaat tgtcacctac agtgtggact gtgtctcccc 109740 tctgctcagc aagctacctg tgccacttat ggaaaaccaa gtgcacacac atgagcttga 109800 gctctgtaga aatgcctgac aaatggatgg ctgaagctgc aacactgaag ctctgctaag 109860 atggggagag agaaaaggaa gggcaggaga gagtcaatgg aaaagatggt gacgaagggt 109920 gcagctcaac cttagagtcc ttttaccagc actatattgt tctcacagac tgtcttaatt 109980 cccgtgtact tttaaatagt cgaaaacgcg attttcaacc tattttaaaa cccacataca 110040 aatttgaaaa actgcaggca gattttaaca caggggagaa aacaaacaaa gagagctggc 110100 atgggggtca ggacagacag ggccctcaag ctgatggggc atggtcagca gggggagggca 110160 gcttcatggc tgcttcaagg atggagaatc tctgtctcac aaaagtcaca cactttgtcc 110220 tcaagagttc tgaaaaaagg aaaagaagca agaagtccct gcagagggcc gactcccctg 110280 cagccgttct cagcaggctt gagcacataa agatcacttg tgactgcctg tcacagatgc 110340 tcaaatggac aggatgggga aaaaaaatac ccttcacaca cttaaaaatt actctaagtt 110400 attttaaatc tggaactgtt tgtatattcc ttataagttt atgaaactca cacggtcgct 110460 ccatgactaa ctgaagcgga attgagagag tagtctctat ttataacttc tctgcttgtg 110520 cgtgcgtcca gccctatttc cattctctgg tactgtacgc agagttatgt gaagccgtgt 110580 gggctctgaa atgctactta cttcctaaca aggcaggcct gtgttccata ggggcaaatc 110640 agtgggagac ggggtgaggg gttgcaatga ccaagtgaag gccaggctca gaggggaggt 110700 ctcaagcacc catcattgct caggcagatc ttttgctgtt ggttttgttt gtttgcttta 110760 ttttatttat ttatttaaa gacagagttg ctttgtaaac cctggctgtc ctgggacttc 110820 ctctgtagac caggctagcc tcaaattcac agagatccat ttgcctctct gcctaccgag 110880 tgtttatacc acctccaccc ggctagactg cacctctcta aacgggtgtt tgagcctgtt 110940 ttgggacaat cgcacacctg gtgatggctg agagatctgt tctgatggtg tgaattcatc 111000 aatacacaca ttcccaggtc agtgccttaa atctgtgtgc ccgctcatgt cacctcttcc 111060 acttgatttt agtggaattg tgtcaccaaa gggtgcaagg ctttaacagg tcatgcataa 111120 gcctctctcc atacacaaat gtttatgtga agataactga aatgactgac cagagtcacc 111180 catgggacaa ctagtactca gagcagagca catgaggcct aggattaagt tctgttacga 111240 aaagcaagac ggttcatgga gagagtaata aatgtgaaag atacacgcgc acatagacta 111300 Page 67

## PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt cccaggtctc ccttcatcac ctccagacat gttctggaat accctctagg ctggttttct 113340 acggttcacg ggaattttca ttggaagctg aaggaattaa caggtagatt aactatctct 113400 ataaacctga accccagtaa gcagacagtg ccagcccgta aagcatagat gagtctggaa 113460 cttggaatgg tgttcaagaa tcactttatc cgtggtataa aaatggaagc attcagaaat 113520 gggaaagggc caaactgcac tccgcctcct acaacgggac ctgtgacccc acagaagttt 113580 ggcaatgtca aggacacgcg aagtttagtt gctacacaaa gggactggtg cctatacagc 113640 gatgcctaag atacaggacc atattttcca aatcaactta aatgtgcagg tgtgtgtgtg 113700 cacatgtagt gcacgtggaa gacaaaaggg caatgcagta tgctttccac tattgctctc 113760 tgcctggtct tgtgaagcag gggctctcac tgaagcagga gcttactgac tggccaagct 113820 ggtaaccagc aggccttttc tgtttcctaa ggccacttag tttttacacg gatgccgggg 113880 atctgaactc agcttctcac acttgcagaa ccatctctcc attcctccaa atcaactttt 113940 aagcagagaa gccttaaatg ctgcgaactc ccaaactatc agagtcttcc tcttctaaga 114000 aagtateece aggtttteea aattetggae teagtetgaa agegagggte tgaaaaagee 114060 agagtcatct cttccactcg ggggtgaggt ggaggtgggg gcaataagca ctgtagcaac 114120 ttccttgaca ttcatgtcaa aggagctgct gcctttcttc agaccccaga gtttcctcat 114180 ccagcaggag gaggcaggga ggtcagggtg cagaagccgt ggagcctgta tcctagtctg 114240 cagcgtatgt caaggtgtgc tttgtcccga tttagagaca gagcgagcgt tgaagtgaaa 114300 aagggttaag aggatggaac aaacagaaca tactttgcag gcaatgacag tgacccaggt 114360 aaaggcagaa gctgtgctca actccctgta atgggagcca gacatgcaac ttctgttatg 114420 caatgctttg tgaaaagggg aaggcttttg gtggtctcca ctctcccacg ggggcctctc 114480 tcccacggcc taggaacgca ggagaggga ggaatggcca ccacaagtct gggctgcatt 114540 cctctgttct gcttctccat ggggcctggg agcgagcacc tttgcaagag aaaactcccc 114600 aagagctact ggattctgga gcaaaggcaa ctcaggaact atgaacccag aggacggaca 114660 tcttcacttg gcagatggag aaagtgaagt tcaagcaatc taagcgagga aggttgtagt 114720 gctcgctcac tcactggagg ggggttgggg ggagcttgtt caagcttcca aggagtgaac 114780 acagggattg ggacaccaga aaagcagctt ttcttcatct ttgaaatcac aagccctttg 114840 aacacacgaa ccgcacacct tccttaaaga aatactgggg attttgaaat caatttaagc 114900 acctctaatt tccaaccctg aaacgtttta ctacgtgcat tctctaactg cactcgtctc 114960 tcaccttgta aacaagcaag atcggctgga tgagtgtccc ctaattacgg tttccttggt 115020 gcccgtctat ccgcattggc agcacctgaa ctttctcctg cactgtatct tcctaaattg 115080 acattctcag cccacactgg cacgctggcc tggtgccatt caacagcaca aatgacacat 115140 cccaagcctg atacttccgt cctcctgccc tctccacact gcgtgtccgt aatcctgccc 115200 tccacccact ccccaaccct ttgaaatttc taaaccccag cagaggaagc cctgtagggc 115260 tcttaataag ctcagtcatg ctcgaaatat ccgttttacc cacagggtat tgtaggcagc 115320 Page 69

## PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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# PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt aaataaaatt gaaactgacc ggctaggctt tattctccaa atctcatgaa atagcaaagc 129420 aaaaaaacaa gaagcaactc aacgctttca gctcaaatga gtttcaattt tatttcaaaa 129540 tgttttaaaa tctagtttat tttcatagcc acaaaagctt ttgaatacct atgaatcaaa 129600 agccatttgg cagaaccatg gagcttgtcc tagttgcttt ctctcaaact cttccctggg 129660 cctgttaacc ccttgttagt cagtcacgca cagcaggtca ctctcagtac ccagttctta 129720 ggggcactct acagccttag tgtgtatgag caggcagagg ctctaggctg gacggcacat 129780 gaaaatgata tatacagact ttaactacta attactttag acaaagaaca aacagaaaac 129900 aaaaaacaaa aacaaccccc tccccaaacc caaaccaaaa aaaccactaa aaaacaaaac 129960 aaaaaaaccc caatccacat cctttagaga ttattttgtt aatctgcatc ttgatctgtg 130020 ctgctcaggg gccacaggag gccacaggag gcctctgaaa cttgaaacag ttaagattaa 130080 gtaaaaagtg caacgaagag agctcaccac atcctaaatg tttctcaact actcaactcc 130140 cggctaccac acgcagggca gacacagggg atctgtcgag gcacaagact acagagtaac 130200 agtgcaggtc agacagaaga gcaggggtgt ggtctcagtc cagctctcac atagctcatg 130260 ctggcctcaa tttcgccatg tctctgaaga tggccttgaa ctgatcttcc ggctcccttt 130320 gggactgcca ggtgtgtgtt actctacaca ggttacgtaa ttgtcaggcc tttgtgtttg 130380 tgtgcatttc cctaagcaac ttcatgtaca aagctaagtt gggtatgcat tctctcccca 130440 ggcctggccc cttactctct accgtaaaat gcttcttccc taacaacccg acttgagtgg 130500 ggtccctacg tacagagaaa ggagatattt acagaagaaa gggcaaatga ctgcttttac 130560 agggaaagag catcccaggt caacacacgt accagattgt agagagggca ggtgtctcca 130620 tccccgtgcc tctctatttc ctttccaaca ctcagccctg tgtgagcaga gagtaaggcc 130680 cctctttgat gctgcacccc cctattataa gcacaatgct tgtaaccaaa cagatggttg 130740 gatgtttggg aaatgactga atgaaacaaa agaagaatgg tattctgtta aacaacagcc 130800 aacatccctc tagagcctgg acacacgtct ttatagagcc tggatacaag tctttatatt 130860 ggatagcaac ctctttactt tcaaatgcaa tctcagagca acccagaaga ctgattcagg 130920 tagtatacca cagctcagtc tcttccatgc tcaacaatgg ctccttccaa atggcattag 130980 cgttgtctac atatctgtac agtcagagct aatgtctatc tgttcgtctt taaatggccc 131040 agagcttttc actttccata tactatttca cctacccttc acctggatat tgtctataca 131100 ataaagagga ggaaaccaag gcttgggcga aactgacttg ccagatcaca tagagttata 131160 ggtatataaa tggaaaagct ctggtaaaga ttacagacta tgctgattct attagctggc 131220 tgtaggacag ctgaatggat ctctttcaag gaagggcatg atttgtaagc atcccacacg 131280 tcagtgctga gtaaggctcc taagtcctgc tggcttgctg ccagccagta gaccccttcc 131340 agggtgaggg aactgggcag agctcagcac aacccagctc acctaactgt ggctgtcaga 131400 Page 77

PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt ttaagttaac acggcccttg gcaggcatgc ctgaagcttg acttttcggt gattacagac 137460 cctatcaaac accataaata ataacaccac acatatatta catatataaa aactataaca 137520 cagaacactc aattggcttt cagtaagtgg gctatttttt tttctttgtt gcttaatgta 137580 ttctagatct gtctatgttt acaaacggta tgtcttctct actaacaaat aggatttcaa 137640 attaaaaagc tgaacagcaa aggagacagt gaagagacaa tctgttagct tttcatctga 137700 caagggatta atatactgaa tatataaaga acaaaattta aatgtcaaaa gaacaaataa 137760 tcaaaccaat aaatgggcaa attaatcaaa tgggcagttt tcaaaagaag cacaaaagac 137820 caatacatac atgagaaatg ctcaacaccc ttagccacca gggaaatgca aatgtaaacc 137880 acaccgagat tcaaatctca ccccattcac aatggagcac attaagacaa ccatcaacaa 137940 acactggcaa ggatgcaggg ggaaatgtgc ctgtacacat tgttggtgga aataaaaatg 138000 aagtagttta gatactatgg aagcctatat ggccaaaaat gtgctactac ctcacttcgg 138060 gatgtacaga tgtgatgcta agtcagcaca cgacacatcc acgttactat ccacatcagc 138120 caagcaatgg gaccaggaaa agatgaagga aatgtgatgc acacgcacag ctgtgtcaga 138180 tgtcaaggat aaaaccaaac tatcggcggg aagttaagga gtggacaatc atctgaagtg 138240 acgctggcca gaccaaagcc tatctcatct gtgtattttt ttttttaat gaaaataaaa 138300 gggaggcttt gtacagaggg aggaaatgat acagaaggga aagaagggac aaacagaaga 138360 taatgggtgg taatcaaagc acattttgta tatggatgaa agtattaaaa caagaaaaca 138420 gccatcttat cttcacagac agcattctgc tctatagata accctgagtg gtccccaacc 138480 ttgcctgtgt gtttaaatca ctgttacttc cccagaagcg gatttagttg gtttagaggc 138540 tatcacgtga gccttgaaat gaaacagtag aaacaaagtc ccagatgatt ctaatgagga 138600 ggcaggtttg agagataaca gtaaacctat ttattatccc tctactgata gaacttgtca 138660 tttcagacaa caccatgtaa agtggcctaa tacacctgtc agttcaccgg tgtgctggtg 138720 tgtctgtggg tgatcatcct gggagaatta ccatgtcaaa gggcacaggc actggtacat 138780 acacacaca acacacaca acacaccatc ttccagcccc ctctgccaag tggggctgtt 138900 ttcctataga tctgtcatca gaatctgtga ctgaacattt tagattttca agcatggggg 138960 gctgggagga gctctgaata ctcataaaaa ggactttctg atgtgttcta ctacaacatt 139020 tctggttctt ttgtttgttt gttgttgttt acacctttat tatgaattca cttagagtct 139080 aacaaggatg gacccatgat ccaacatcag ttaagtaaag agcgtatttg ctccaatgat 139140 ataaaacgtc atcttattaa acaacgaacg gccacatgtt ctcacatcta cggctggata 139200 tcatattctg tcccttcaca tactggcacc ttgctagcta tttaatcatt aattacttag 139260 gcaccatggg atgctttaat tatctggtaa tttcgttggg cttgtttagc actattacta 139320 ttatcaccat tattattgtt gctattattg acgactgtag agtcagtttg tataattaaa 139380 agaaaccaca tagtatttga agtatattaa ctttataaac acaggaagaa ctgacatctt 139440 Page 81

PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt ggaagtgcct ggctagtaac aacaacacag tcacacatat ctgtcctcaa ggagctcctc 141480 gagtaaacac ctttgctctg atgatgacaa gcatggccac agtccctgtg cttgcagaat 141540 cttggttaga aagctcccaa caccaccatc ttccactagt tagcctctgc tgttccccga 141600 actgaatccc taagtaccga atgctctcct gttccacaca gaaacctctg agaagcccag 141660 tttacagaat cagagactgg gccattcctc gaagcattgc taaagaactg gcaggagtca 141720 ctcaagttct caggagctat gggaagataa gattctcccc aatgcggttg cactgaaaga 141780 cagggcagta aagaacaatt atgcctaacc ccgatttctc tctgaatcca tttattactt 141840 ctcaatttag gagagtcact cttgtacctg caccctggcc actactcaga aaaacattag 141900 tgtatccaat gatcccttta gtaactactg gagaagcagc tagctgaagc atgggggaat 141960 taaggaagac cttaggagtt caaaacccca aagtacaaac gcactgtcag cacacggaga 142020 gatctgtttt tttatgcatg ccttatgcaa actggcctaa gctaaaaaat gttataaagc 142080 attttgagga gtaaattttg atttcagggt taaaaagaaa tgtacagagt caaagaatct 142140 ttctgttggc tgataacaga gactccttgg aaaaattgac atttcttttc gagaagcaaa 142200 aggtggagta gaaatagtgt gagcagcata tgatgtcttg tgacaatgca gagaaggcag 142260 ttgggagctg ccactaatgt cgagttttca ttaggctcat atctccaact tttggttttg 142320 tgaggctgca actcaattgt gtagtaaaaa aaatttgtag tccattaggg tgcttttaat 142380 attcactata tctactatga aataggagct tagatgatga tgatgacaac aacagtaata 142440 gcagcagcta ctttgaaaca ctcacaggca ttgtgagttg gagccctgag cactaaccac 142500 tgtaatttgc tatcaggacc actgggtatg gcattcggaa aacggacata tgcaatcaat 142560 gcttgtgaca tgggagaaca aaaccttgtc aaccaactgc aaacagatgg ctcatggaca 142620 acaaaacctt agagaaaaat gcaggaatat cagcggggca gtggggggga aaagagaaca 142680 ctttccagac tgtatgcata gaagggcctc aaaggccgcc atgacagatg tgttcctgta 142740 tcggggtcaa caaagaataa agcccatagc acaattctta ggaaaagttg aaatgcctgt 142800 tttgtaaata aaacacaccg acttaaattt ctactactta attttataaa ttccgcttaa 142860 atatgtgtct aaatacactt ttttcccctt gttttgagac atggtctctc tacgtagccc 142920 tggctatcct agaactagtt atgtagacca ggctgacccc tgacgcgtgg ggaccctttt 142980 gcttcttcat ctggagtgct gggattaaag acatacatca accagctggg cttaagtgtc 143040 tagattttta acttctttat atttattctt accctcagtg ttattgaaca ttgactgtgc 143100 agacttcaga gtttaccaag tttgaggggc tggccaaatc cttctggact tactgagaaa 143160 ggaacagacc caggacaccg actggagcta cacggtgggc gccatggcgc caggccgaga 143220 cacgtggatc cttcggcttt gcttctgtgt ctcagctacc tcagaggttt gctgtggaat 143280 cactagtatt ttaaacaatg caaacgcaat tacagttgaa gcacattctc taggagaagg 143340 aaaaggagat tggcatgtag aagcttcatt aaacttttgg ccttttcaaa gctaaacgag 143400 tcttaagaaa agccataaaa agttcccgtt gattgattta aaaacaggct ttttttttt 143460 Page 83

PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt caaatactca tcctgcacga agaagtaagg tgcaagtgcc tttatgactc tatttccact 145500 ctagacgctc aggctcaagg cagagcgctt agatcctgct gcacttccat aaaaacaagc 145560 ctgatttatg ctgaaagact ttaatgacaa agttgtcctg atgtgcgtgc gtgcgtgtgt 145620 aggacctaga gaacaagggc ctttgtcttg ctctgccgaa gcacagtgag catttcctga 145800 gccctgattt agcctttaac tgatggttct ggtttgtgct tcaacagaaa taattgcatg 145860 actgaccaaa aaaggaaagg ccaaacaagt cttaaataat gattgttggc gtaccaactg 145920 caccaacctt ttctaattac aactctccat tttattattg tcaggcaaag tgagtacctt 145980 aacttgaaag gctaagctga gggggaaaag cctttttgtc tctactttac aggtttgttt 146040 ttataaacac tccctcagtc cccccaaagc aacaggaggc aggcacaatg accctactga 146100 ggagtacagc ttttacctcc atgggacaat agattgcttt tctgttagcc cctgggagta 146160 aaaccagctt taatatggat gccctttcct tatcaaagac agcagggtaa tacggggagg 146220 gctgccaagc ttgggttgtg cggacttggc aggtatgagg cctacctcgc ttctacacca 146280 cgtcactcaa ggaacagagc agaagaaaca cgttctggaa ctttccagag aggccatcct 146340 tgttcatgta ttctagtcca gagttctact tctctctaca gagatggatg aaacaaaagc 146400 aaaacaacac agagaaaaac cccttctaag ggagctggag ggaggagata atctagagag 146460 aggatgccaa aagtggcttg tttccaagtg acaaaatgca cctttgctgg ggaagctagc 146520 aaggtagaag cccctgttca gaacttttca aggagcagat gaagacaaaa aaatgccacg 146580 caatggggga cggaatcctc tagatgtcga gaaaaagcag cggccatgcc cagggagcag 146640 gactagagag aggcaagcca actcctgctc atggcaaggc ggcttgcctc tccagcgcac 146700 tctgcagatg tttccgcacg ttgtttctat agtctgaaga cactccgctg gcagtgtatt 146760 gttggatgct ggcagaatct ctagtcaaga ctagcaactc cacctccttc ctgacatcag 146820 caagggggaa cacaccagga gccaggagac aaggtgtagg tgcaggagac aaacaccgtg 146880 tgtggtccag agctgaactt gctgctggag actgtcctgt caggaaaagt aaaaaacaaa 146940 ccaacacaaa aatccaggag gtgcagaggt agaggcagag gcaggcgggt ccctgtgaat 147000 ttgaggccag tctgctttac acagtgagtt ccaggacagc aggggctgta tagagagacc 147060 ctgcctcaaa aaacaacaca aacaaacaaa aacaaaagaa gggggtgaag aagagaggga 147120 gaaggtgggg cgggggccag gggttgggta tggggaggga aacttaccct ggtggagaca 147180 gtgaaactgt tgtttgccac tgcctctctt aggtagggtc taactgtact cctgactaat 147240 cttcaacttg ctgtattaat caagttgggt tccaactact cttggaacta caggtgcaac 147300 ccaccacac atcgaagtct tggcgcacag ctctaggggg cataggaaat ggctttcccc 147360 gtgccctgta gaaatggaac tgaaagctca tcatggcggt aagactgttt tttagctcac 147420 actctcacac tgcaaatgac ctaatgacac agcagggcct ccggtaccat cctcactccc 147480 Page 85

PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt tatgtttcta atctctaact tgtacccctt gtgcagcctc aaagagatac atgtcacttc 149520 ccgcactgat ctgacaaccc tctctctgag aggctcataa gcaccctttc ccaaggatgg 149580 tcacttacag aaagctgcag gcaaagtaaa tccaagtctg ggcagcatat aataaatggc 149640 tagtggcaga taatgaaaag gctgaaatca caaaatcaaa attctttcca ataaaggtga 149700 atcccacacc tattcattaa cagtccccta ctgtctaaga tgtttgtgta agatcaatga 149760 ataagccatg tcagaagact tgccgactat ggaaactatt tggataatgc tccaaggggc 149820 tcaggaatag gacagatcca atttagaact ggggggggg gggaggggga cactctgtct 149880 ccaggccagg tgatgaagac atacccaggg tcattctttc accatgacaa agacatctcc 149940 attgtttcaa agtcactttc agtctcctac aaagttatct ggagaatagt gtgccatgtg 150000 aatgaatgtt caaacttaag caagggtacc accttccttt cagaaacaac cagagaaata 150060 cgaaactgcc tctggggcat cgcaataagt agctggggct ggtaagctcc aagtcttacc 150120 tctgaagtca tcagtaagca tgggacagtg aaggctcaga cataacatct catccaagta 150180 atcaagagta acgccaccca tcacagatgt actggtgcca ccctgggcac agtgacacac 150240 cgagggcact gtataccctt cctgaaggag ttaatcactc aaatgcacaa acctaatgtc 150300 acgagagacc ccagtttaag agcaggttat ggggtcatag gatgagtgct cgttaaaagt 150360 gacaacacca tgcaaaatca gcaagacaag cagacccatc acagcctcga gaagaccaca 150420 cagataagac acatccacac gaccaaagac ttgggaatga aagaaagcac gttagtggga 150480 aaactggtgg aatttaaata aagcctgcta agaatattgt gccaatgtta gtgtcttggt 150540 tgtgataact ggattatgat tatgtaagat gttaacatga ggagagctgg gtgacatttc 150600 aggaactctc tgtgccgttt tcaacttttt ctaaggtttt ttttttttt tttaaatgaa 150660 gctgaggagg aagcagagag cctgggaggc tggcttactc tttagtttgc tttgtcactt 150720 tgtccctggt aagtagggtc attatactac agagctggct tgtgttacag ctcttccgat 150780 tttgctccct ccatgtcttc ataacttttg gggaatcgga tgttactcag gtgagacaga 150840 agatgagtga agtcacaatg tcattggaga ttagagagag aaagagagag agacagacag 150900 atagacagag agagacagag aacaaacttc aaatttataa acacattatt cttccacaaa 150960 ggtccacatc acacactccc cccatttgtg caccaccctt gacaacacag ctgtgtggtt 151020 ctctagaaga tgtagttgga accaactttt agcgtcctaa ggaatgatgt catcctttgc 151080 tctataggag ctggttccag aggttttgtg gaacagcttt ctttccagaa agcagccagg 151140 tctgaagctg ctcagacttg ctctagactt cttctgtcta cagagtacgg caacatctcg 151200 tctacaggga ctgcgactgt tccggctctt tgatcatcct gttccctaaa cttaacttcc 151260 ttaagttgca aaacatttac tcttggttgt ttgggtcctt cctcggtata gaaattcata 151320 ttctctgttt ctctctctc ctcaacgggg ctgtggactg aacttacgtg aacttcttgt 151380 gtttgcctgg ctttcactga ccctacacct tcagtccttt tcctttgtac ggagaaagaa 151440 atcattaaag agaaaattgt teettaaaat catecettte eecateetee aageettetg 151500 Page 87

### PCT - Sequence listing for submission.txt

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PCT - Sequence listing for submission.txt

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## PCT - Sequence listing for submission.txt

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#### PCT - Sequence listing for submission.txt

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## PCT - Sequence listing for submission.txt

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#### PCT - Sequence listing for submission.txt

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